

WHAT IS CLAIMED IS:

1. A computer implemented method for determining the optimal focal height for an objective lens coupled with a line scan camera in a virtual microscopy system prior to scanning a microscope slide, comprising:
 - identifying a plurality of focus points on a microscope slide;
 - positioning an objective lens coupled with a line scan camera over a first focus point;
 - scanning an image of the first focus point at a plurality of objective lens heights;
 - determining the objective lens height having the greatest contrast in the scanned image.
2. The method of claim 1, further comprising:
 - combining a plurality of objective lens heights into a focal surface; and
 - adjusting the height of the objective lens according to the focal surface during subsequent scanning of the microscope slide.
3. The method of claim 2, wherein the focal surface covers the entire microscope slide.
4. The method of claim 2, wherein the focal surface covers a sub-region of the microscope slide.
5. The method of claim 4, wherein the sub-region substantially corresponds to the area of microscope slide comprising a specimen.
6. The method of claim 4, wherein the sub-region substantially corresponds to an image stripe.

7. A computer implemented method for determining the optimal focal height in a virtual microscopy system prior to scanning a microscope slide, the virtual microscopy system having an objective lens coupled to a line scan camera and a stage for supporting a microscope slide, the method comprising:
 - moving the stage in a direction orthogonal to the objective lens;
 - continuously adjusting the height of the objective lens while the stage is in motion;
 - scanning an image of an area on the microscope slide while the stage is in motion and the height of the objective lens is continuously adjusted;
 - determining an objective lens location having the greatest contrast in the scanned image.
8. The method of claim 7, wherein the objective lens location comprises a planar location on the microscope slide and a height of the objective lens.
9. The method of claim 8, further comprising:
 - combining a plurality of objective lens locations into a focal surface; and
 - adjusting the height of the objective lens according to the focal surface during subsequent scanning of the microscope slide.
10. The method of claim 9, wherein the focal surface covers the entire microscope slide.
11. The method of claim 9, wherein the focal surface covers a sub-region of the microscope slide.
12. The method of claim 11, wherein the sub-region substantially corresponds to the area of microscope slide comprising a specimen.
13. The method of claim 11, wherein the sub-region substantially corresponds to an image stripe.